RECOMMENDED STRATEGY FOR RELEASE REPORTING

Report from the

Spill Notification Regulations Subcommittee

January 31, 1998

Draft

Recommended Strategy for Release Reporting

EXECUTIVE SUMMARY

This report of the Spill Notification Regulations Subcommittee recommends a strategy to define the reporting of accidental releases of hazardous chemicals or petroleum products to the Department of Environmental Protection in accordance with Connecticut General Statutes Section 22a-450.

The report summarizes the results of Subcommittee research and deliberations over the past year, in ten consensus findings and opinions important to the development of a release reporting program:

- The substance of a program is more important than its form.
- Other forms could be as effective as a regulation.
- Common-sense criteria exist against which a program should be tested during development.
- There is a threshold of risk below which there is no concern for certain releases.
- Present terminology is not as clear, or as consistent with statutory language, as it should be.
- The previous drafts of release reporting regulations had several good concepts.
- There are lower levels of concern for releases where expertise exists to deal with them.
- Historical releases can be incorporated into a release reporting program (but the question of how best to do it is complex and was deferred for future consideration).
- There is a high degree of convergence in the concepts the various stakeholders have about appropriate release reporting.
- All stakeholders can be satisfied.

The report also summarizes the Subcommittee's recommendations for nine specific elements of an effective strategy to define the reporting of releases:

- Make terms and concepts clear, and consistent with statutes.
- Carve out non-reportable conditions.
- Carve out exceptions to reporting requirements.
- Specify clear thresholds for reporting releases.
- Clarify how to determine a need to report.
- Allow reporting flexibility for qualified facilities.
- Avoid imposing internal functions that add no value.
- Test each program element against the criteria of workable, justifiable, effective, and enforceable.
- Develop an outreach program to convey the reporting program effectively to all stakeholders.

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1.0 BACKGROUND

1.1 Subcommittee Goal

The Connecticut Department of Environmental Protection (DEP) Waste Management Bureau Advisory Committee convened a Spill Notification Regulations Subcommittee in late 1996 to advise the DEP on the reporting of releases of hazardous chemicals or petroleum products. The expressed goal of this Subcommittee is to "develop recommendations for a strategy to define the reporting of releases to the DEP under Connecticut General Statute 22a-450". The Subcommittee met monthly for 2-hour work sessions throughout 1997 and into 1998. These were productive meetings that put on the table the perspectives and positions of the various stakeholders in the release reporting process. This is a summary report of the findings and consensus opinions from those Subcommittee meetings, and of the elements defining an effective release reporting strategy.

1.2 Subcommittee Background and Perspectives

The Subcommittee has 43 listed members: 21 affiliated with business or industry, three with state or local government, seven with law firms, seven with environmental consulting firms, three with environmental advocacy groups and two with Fire Departments. About half were in attendance at any given monthly meeting; others have contributed input via phone or letter. The technical depth of the members is considerable, and reflects a high degree of sophistication in the various aspects of release evaluation, cleanup and reporting. The current mailing list is included as Table 1. Individual perspectives on spill reporting were frequently different, but rarely in direct opposition. The group perspective was that the goal was worthwhile and achievable, and that consensus was possible. When the pronoun "we" is used in this summary report, it refers to the Subcommittee as an entity, and represents consensus views.

1.3 Consensus Methods Used

We used a number of traditional group process methods (questionnaires, diagrams, exercises, and other feedback mechanisms) to elicit views of the different Subcommittee members. These views then were aggregated into consensus areas and reflected back on the members for consideration. Materials sent back to members then were discussed and further developed or refined at subsequent monthly meetings. Materials were occasionally recast in different ways and re-examined by different group members to assure that the wide diversity of stakeholder views was represented. The Subcommittee group process is outlined in timeline form on Figure 1. We believe this summary report represents a fair and balanced consensus statement from this diverse Subcommittee. We acknowledge that our consensus is not unanimity, but think this statement is likely to be considered reasonable by the wider stakeholder audience not on the Subcommittee. Therefore a DEP release reporting program developed around the strategy suggested here should be successful.

2.0 SUBCOMMITTEE FINDINGS AND CONSENSUS OPINIONS

In pursuit of the stated goal, we investigated a number of areas and issues related to reporting of releases. The findings and consensus opinions on the major ones are briefly summarized here, and are the basis for the reporting strategy recommended in Section 3 below.

2.1 Form vs Substance

We found it helpful to distinguish between the form of a release reporting program and its substance. Form is the vehicle or structure chosen (statute, regulation, guideline); substance is what the program does and how it does it (what's reportable and what's not, how it gets reported, and so forth). Our opinion is that, in developing the program, substance should be considered first and form second. The strategy recommended in Section 3 below has good substance irrespective of the form chosen.

2.2 Regulation vs Alternative Forms

In addition to considering a regulation, the Subcommittee had the latitude to consider and evaluate alternatives forms to regulation, such as:

- no change from the status quo (reporting under the present statute, with no other regulations or guidelines);
- a less formal reporting mechanism than a regulation (such as a guideline document);
- adaptation of any federal or other state mechanisms that had merit; and
- amending the statute to make it more specific with respect to reporting requirements.

Our opinion is that while regulation may seem to be the most obvious form for the release reporting program, other forms could work as well. For example, New York reported a 40% drop in unnecessary reporting in mid-1996 after regulations clarified the requirements. Several major Connecticut manufacturers reported a 70% or higher drop in unnecessary reporting after developing an internal guideline based on the statute as amended in 1995. (We note that the current statute appears to require regulations for enforceability.)

2.3 Criteria for Evaluating Proposed Release Reporting Programs

We agreed on four basic criteria that any proposed release reporting program should meet, whether a regulation or one of the possible alternatives forms. The program should be:

- workable;
- justifiable;
- effective; and
- enforceable.

Also, we found that one of the apparent impediments to past attempts at developing a regulation was (perceived if not actual) complexity and lack of a justified basis for some of the elements (i.e., failing the first two criteria above). The meaning we gave each criterion is presented in detail in Table 2. There was no clear consensus on whether one criterion was more important than another, although simplicity (embedded in both the criteria of workable and effective) was discussed frequently in the context of the ability of small industrial firms to understand regulatory requirements

and act appropriately. Our opinion is that all four criteria should be considered equally important as evaluators of candidate reporting programs. The strategy recommended in Section 3 was tested against these criteria, and meets them all pretty well.

2.4 Risk-Based Threshold

We found that there is a threshold of risk (to the public health or environment) below which most people agree that reporting serves no useful purpose. The threshold level is not particularly quantifiable, but it is tied to three concepts:

- effective containment/control of a spill at or near its source;
- low quantities of material, or low hazard materials;
- no or minimal potential for escape of material to create a human exposure or environmental problem.

Our opinion is that a reporting threshold consistent with risk should be one of the basic concepts of the release reporting program.

2.5 Terminology

We went through a period of confusion on the Subcommittee due to different individual perceptions of what constituted a spill, a release and a reportable release. We found that federal and other state regulations generally talk in terms of releases as opposed to spills. Prior draft DEP regulations talked about both "releases of reportable materials" (1994) and "spills" (1987). Since the use of terms has been fuzzy, and confused this (relatively sophisticated) group, our opinion is that the meaning of terms should be defined as precisely as possible, and as close to dictionary definitions as possible. The language in various sections in the Connecticut General Statutes (e.g., CGS 22a-133, -448, -449(a)(2), -450, and -452c) should be reviewed and conformed to this as necessary, so that the statute and the release reporting program say the same thing. Figure 2 provides an example of clarifying terminology.

2.6 Previous Attempts Had Good Concepts

Both the October 1987 DEP draft regulation and the November 1994 DEP draft regulation had concepts that we found were appropriate and made for clarity in reporting, specifically:

- setting Connecticut Reportable Quantities (CRQs) by categories based on a fraction of the federal RQs;
- clearly carving out materials and conditions excepted from reporting;
- not reporting releases below de minimis levels.

These concepts are retained in the strategy recommended below, and our opinion is that these concepts should be included in the new release reporting program. There is not a clear Subcommittee consensus on the actual levels for de minimis or for fractional RQs (CRQs), but support for the concepts is solid.

2.7 Lower Levels of Concern Where Expertise Exists

We found that there is a lot lower level of concern for reporting releases from fixed facilities large enough (or sophisticated enough in chemical handling) to have existing emergency plans and in-house expertise in dealing with releases. Our opinion is that some flexibility should be built into the release reporting program to allow the various facility-specific reporting mechanisms already out there to continue to be used. For example, when several major manufacturers' internal spill reporting policies were amended to reflect the 1995 legislative change to CGS 22a-450, reportable releases dropped by 70% or more. This was due to elimination of reporting for those spills that were onto an impermeable surface, were cleaned up promptly and presented no other hazard (i.e., situations below the threshold of risk discussed above). We do not intend this flexibility to be an endorsement of the practices of large facilities as opposed to small, nor to unbalance the economic playing field. This flexibility is simply an acknowledgment that functioning systems are already in place at some plants (both large and small) and may be relied upon.

2.8 Historical Releases

We found that reporting of historical releases upon discovery was not covered in the 1987 draft DEP regulation, but was in the 1994 draft, and also is covered in some manner in both New York and Massachusetts regulations. Our opinion is that discovered historical releases presenting an imminent and substantial threat should be reported, but we were unable to develop a consensus on how to incorporate that into the recommended strategy. We believe it is a solvable problem, but elected to defer further consideration until after this reporting strategy recommendation for present-tense releases has been made to DEP.

2.9 Convergence of Concepts

We found there is a high degree of convergence in the concepts the various stakeholders have about release reporting. For example:

- the 1995 legislative change to CGS 22a-450 inserting the phrase "threat to human health or the environment" converges with the results of the risk survey we did which indicates there is a perceived threshold for what constitutes such a threat;
- the clarification of terminology (spills, releases, reportable releases) converges with several internal reporting guidelines used by manufacturing companies with emergency plans which carve out materials/conditions not reportable at their specific facilities/operations);
- the questions used by the DEP OCSU dispatch function to assess a phone report converge with the diagnostic model suggested by one of the Subcommittee members to determine reportability.

Our opinion is that there's a lot more consistency in actual practice than we previously thought, that most existing release reporting practices converge on common-sense solutions, and that a DEP release reporting program that embraces these practices should enjoy widespread support.

2.10 All Stakeholders Can Be Satisfied

Although a very diverse audience has a stake in release reporting, and the Subcommittee members each have somewhat different perspectives, we found certain views the different stakeholders have in common. The release reporting strategy recommended below accommodates different perspectives, but emphasizes those common views. In our opinion, a DEP reporting program structured around the reporting strategy recommended below will satisfy most stakeholders, irrespective of the form the program takes.

3.0 RECOMMENDED REPORTING STRATEGY

We recommend the following nine elements to the DEP as a good strategy for developing an appropriate and effective release reporting program. Seven elements address the substance of a program (whether regulation or one of the alternative forms). Each of the seven elements is phrased in bullet format for brevity and clarity, with examples given where we thought it would be helpful. The eighth suggests testing of program elements against the four criteria. The ninth suggests an outreach program, particularly for small business.

3.1 Define Terms and Concepts Clearly

Recommendation	Example or Explanation
• Separately define spills, releases, and reportable releases.	See Figure 2 for an example of the concepts. "Spill" is probably a term to be used judiciously, even though it's presently used as a synonym for "release".
• Avoid the concept of release of a reportable material.	We believe that keying on the concept of "release of reportable materials" is inherently more confusing than keying on reportable releases, and should be avoided.
• Define impermeable in simple terms, with no PE certification necessary.	Most people will know what impermeable is, especially if well defined. The PE certification requirement in the 1994 draft regs was regarded as inappropriate by a majority of respondents to the questionnaire.

Recommendation	Example or Explanation
• Include offgassing of spilled volatiles creating an airborne exposure pathway outside the facility as a release to the environment.	This is needed to clarify that some contained liquid spills may still be reportable as releases due to evaporation of volatile fractions, if the gases disperse outside the facility at airborne concentrations representing a threat to public health.
• Clarify what's a "threat to human health or the environment".	Most of the risk questionnaire respondents thought there was a level of risk below which reporting served no useful purpose. Clarifying this with some examples could be helpful, but we are not suggesting any change in the statutory language.
• Separate exposures solely within the facility (OSHA issues) from exposures to the public.	Spills confined to work areas inside the facility are not environmental issues, even though they may be safety issues for workers.

3.2 Carve Out Non-Reportable Conditions

Recommendation	Example or Explanation
• Specify no reporting for spills that are contained/confined and do not constitute a release to the environment.	This could be covered by the definitions of spill, release and reportable release. Spills (with no airborne volatiles) that satisfy a "no release" condition include those contained: • within designed secondary containments; • within intact vaults for electrical, phone, gas or water service; or • onto impermeable floor slabs.
• Specify no reporting for releases that occur, but that present no threat to the environment or to human health.	This also could be covered by the definitions of spill, release and reportable release. Prompt and complete cleanup of a material that escaped off a floor slab or out of a containment or other paved surface onto ground with no penetration into soil or passage to surface water would fit into this category.
• Clarify that proper application of fertilizers, pesticides, herbicides or other chemicals are not spills or releases.	This also could be covered by the definitions of spill, release and reportable release.

3.3 Carve Out Exceptions to Reporting Requirements

Recommendation	Example or Explanation
• Acknowledge materials that by their chemical nature are not a threat, and do not need to be reported unless lost to a surface water body, or to a nearby land location where rain could wash them into a water body.	Clean soil or fill, water, food products and the like are not a threat to the environment or public health, although there could be consequences if lost directly or with washoff into a stream. However, a list of specific substances is too cumbersome and would not be useful.
• Acknowledge materials that by their chemical nature are not a threat if cleaned up right after the loss, and do not need to be reported unless lost to a surface water body, or to a nearby land location where rain could wash them into a water body.	Sewage, compost, lawn fertilizers and the like are relatively innocuous but could be a health threat if left unattended, or an environmental threat if either lost directly to a stream or in an area that could send washoff to a stream. However, a list of specific substances is too cumbersome and would not be useful.
• Acknowledge plant process upset or spill situations that are more properly regulated under a water discharge permit than under a release reporting program.	Minor exceedance of a permit limit for discharge to a POTW, or drainage of a minor spill of a POTW-treatable chemical into a sanitary sewer line, are examples of situations best covered under a permit program, not a release reporting program. However, a list of specific situations is too cumbersome and would not be useful.

3.4 Specify Clear Thresholds for Reporting Releases

Recommendation	Example or Explanation
• For releases of chemical products, use the Connecticut Reportable Quantities (CRQs) in the 1987 draft regs, or other variation of a material-based reportable level, keyed to federal RQs for consistency.	These 1987 CRQs are set by category as a fraction of the federal RQs, and seemed acceptable to most of the Subcommittee members. Clarify that CRQs for compressed gases are set in terms of liquid weight equivalent. Use federal RQs directly for materials and conditions not posing a threat to human health or the environment in the context of Connecticut geography and geology. The technical basis for exceptions to the categories should be clearly stated in the reporting program.

Recommendation	Example or Explanation
• Set petroleum product release reporting thresholds at 100-lbs/10-gal, unless to a surface water body (or pathway thereto, such as an active catch basin), or to situations where there is a threat to human health. Also, use this reporting threshold for low-hazard materials without a CRQ.	Massachusetts specifies a 10-gal release as a petroleum product reporting threshold. The 100-lb/10-gal level was also specified in the DEP 1987 draft regs, and should be used unless there is loss to a water body, or unless there is a specific direct exposure issue such as heating fuel loss in a basement. The reporting threshold for releases of PCB-containing oils should be set at: • 100-lb/10-gal if PCB content < 50 ppm; • 10-lb/1-gal if PCB content between 50 and 500 ppm; • 1-lb/1-pt if PCB content >500 ppm.
• Use a 1-lb/1-pt de minimis level as a default for high-hazard materials, such as compounds on the extremely hazardous substance list, the acute hazardous waste list, or the OSHA carcinogen list.	Default de minimis levels should account for the degree of hazard associated with a material.
• For releases to a surface water body, set the release reporting threshold to: • any amount for high-hazard materials; • a 1-lb/1-pt de minimis level for other chemicals; and • any observed indication (sheen) for petroleum in the receiving water body.	Reporting a petroleum sheen is consistent with federal water quality regulations. However, minor sheens in catch basins frequently result from incidental vehicle losses. They pose a minimal environmental risk, and should not automatically trigger a reporting requirement unless they are associated with a release of sufficient volume to actually make it to the receiving water body and create a sheen there. Also, Massachusetts allows retraction of the notification if the sheen dissipates or is removed within 24 hrs. Care should be taken in drafting the program language to exclude releases to water bodies that are regulated under water discharge permits.

3.5 Clarify How to Determine a Need to Report

Recommendation	Example or Explanation
• Incorporate a questionnaire or table-based device for determining the need to report.	See Figure 3 (the Noonan Model). To incorporate this into a regulation would require some innovation, but it would work well in a guideline. Any such device should be for information purposes, and use by qualified persons; not an enforceable part of any release reporting program. It should be published with some examples as part of an outreach program.
• Incorporate an equivalent graphic or figure-based device for determining the need to report.	See Figure 4 (a chart version of the Noonan Model). Any such device should be for information purposes, and use by qualified persons; not an enforceable part of any release reporting program.

3.6 Allow Reporting Flexibility for Qualified Facilities

Recommendation	Example or Explanation
• Add to the program an option for a facility to set up its own written release reporting protocol, subject to meeting appropriate DEP acceptance criteria, and subject to the tests of no threat to human health or the environment.	Sophisticated facilities with established, tested SPCC plans, RCRA contingency plans, BMP plans, integrated emergency plans or similar devices that are specific to the chemicals and situations at the facility should be allowed to use what they have (or what they want to develop) so long as it meets the test of accurately reporting materials or conditions that are or could be a threat to human health or the environment.

3.7 Avoid Imposing Internal Functions That Add No Value

Recommendation	Example or Explanation
• Eliminate from the program any mandatory requirement for facility recordkeeping or tracking of non-reportable spills.	The survey questionnaire showed a lot of objection to the unnecessary work involved and the extra exposures it created. The objection would go away if this were made discretionary with the company (i.e., just used as an internal assessment tool, with no disclosure required).

Recommendation	Example or Explanation
• Define "impermeable" simply and clearly, then eliminate from the program any requirement for PE certification of impermeability of a secondary containment or surface. • Limit the information required in a written report.	The survey questionnaire showed a lot of objection to the unnecessary expense of a certification. If the definition of impermeable is clear, most people will be able to judge whether a containment is adequate.

3.8 Test Each Program Element vs Criteria

We also recommend that as DEP staff develops the release reporting program, each element of the program gets tested against the criteria in Table 2. These criteria reflect the thoughts in a lot of feedback from a wide audience, particularly a desire for simplicity and clarity in determining when and what to report. The four criteria described proved to be useful sanity checks when the Subcommittee was considering strategies, and we recommend they be applied rigorously during development of the release reporting program. In addition, we suggest that applying the criteria consistently through the DEP program development process will clarify the reporting functions. Since form should follow function, this would also provide insight on whether the best form would be an amended statute, a regulation, a guideline document, or some other mechanism. We recommend the substance of the program be developed first, without any particular bias as to its form.

3.9 Develop Outreach Program

Lastly, we recommend -- irrespective of the form chosen -- that DEP develop an outreach program to inform the regulated community and other stakeholders, consisting primarily of brief and simple guidance sheets tailored to the chemicals and petroleum products commonly used in specific industrial or commercial sectors. The sheets could be distributed in the same targeted manner as, for example, notification letters for the stormwater general permit program (manufacturer databases keyed by SIC code).

Table 1

SUBCOMMITTEE MEMBERSHIP

Adams & Conway	Conway, Kathleen
American - Refuel	Smith, Scott
Audubon Society	Santacroce, Lisa
Bristol Myers Squibb	Noonan, Carl
Carroll Enterprises	Mitchell, John R.
CBIA	Brown, Eric
Connecticut Dept. of Transportation	Sawyer, Ronald
Connecticut Spill Contractors Assoc.	Graves, Chris
Connecticut Spill Contractors Assoc.	Crisorio, Loreto
Cummings & Lockwood	Warren, Jane
Delta Rubber Company	Violette, Carol
Down to Earth,LLC	Bogen, Arthur
East Hartford Fire Dept.	Dagon, David
East Haven Fire Dept.	Sanford, Wayne
Environmental Risk Limited	David Purington
Fleet National Bank	McInerney, Dennis
Fleet National Bank	Sahi, Helen M.
Fuss & O'Neill	Rainville, Kevin
Loureiro Engineering Associates	Averill, Margaret
Matthew E. Hackman, P.E., CHMM	Hackman, Matthew E.
Metropolitan District	McAuliffe, John
Newington Health Department	Cosgrove, Bob
Northeast Utilities Service Company	Miller, Rich
Northeast Utilities Service Company	Marston, Peter
Northeast Utilities Service Company	Persham, Richard
O'Brien & Gere Engineers	Randazzo, Mark
Olin Corporation	Lesky, John
Pfizer, Inc.	Huhn, William D.
Pitney Bowes, Inc.	Spence, Celia
Pratt & Whitney	Tierney, Robert
Robinson & Cole	Phillips, Earl
Shaw Mudge & Company	Mudge, Shaw Jr.
Shaw Mudge & Company	Dodge, David
Shipman & Goodwin	Wertham, John E.
Shumway & Merle LLC	Spencer, William C.
Sikorsky Aircraft	Guasp, Henry
South Central Regional Water Auth	Doherty, William
The CT Fund for the Environment	Hall, Karyl Lee
Ulbrich Stainless Steel	Goudreau, Gerard
United Illuminating	Silvestri, Robert
Updike, Kelly & Spellacy	Nicol, Chuck
West Haven LEPC	Guay, Dennis

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Table 2

SUGGESTED CRITERIA FOR EVALUATING REPORTING PROGRAM

Workable. This means it:

- is clear to the spiller;
- is as simple as possible;
- allows some judgment;
- clearly excludes non-problems.

Justifiable. This means it:

- has a clear statutory basis;
- adequately protects health and the environment;
- is risk-based and rational; and
- clearly states reasons for reporting.

Effective. This means it:

- assures reporting of those spills of concern;
- encourages proper actions by spiller;
- allows spiller to make sound judgments;
- makes it clear who/what/when to report;
- encourages pre-set reporting/emergency plans;
- reaches all the intended audiences; and
- assures maximum appropriate cleanup level.

Enforceable. This means it:

- defines what constitutes failure to report;
- has an appropriate statutory basis; and
- holds the spiller accountable for failure to report.

Figure 1

SUBCOMMITTEE TASKS AND TIMELINE

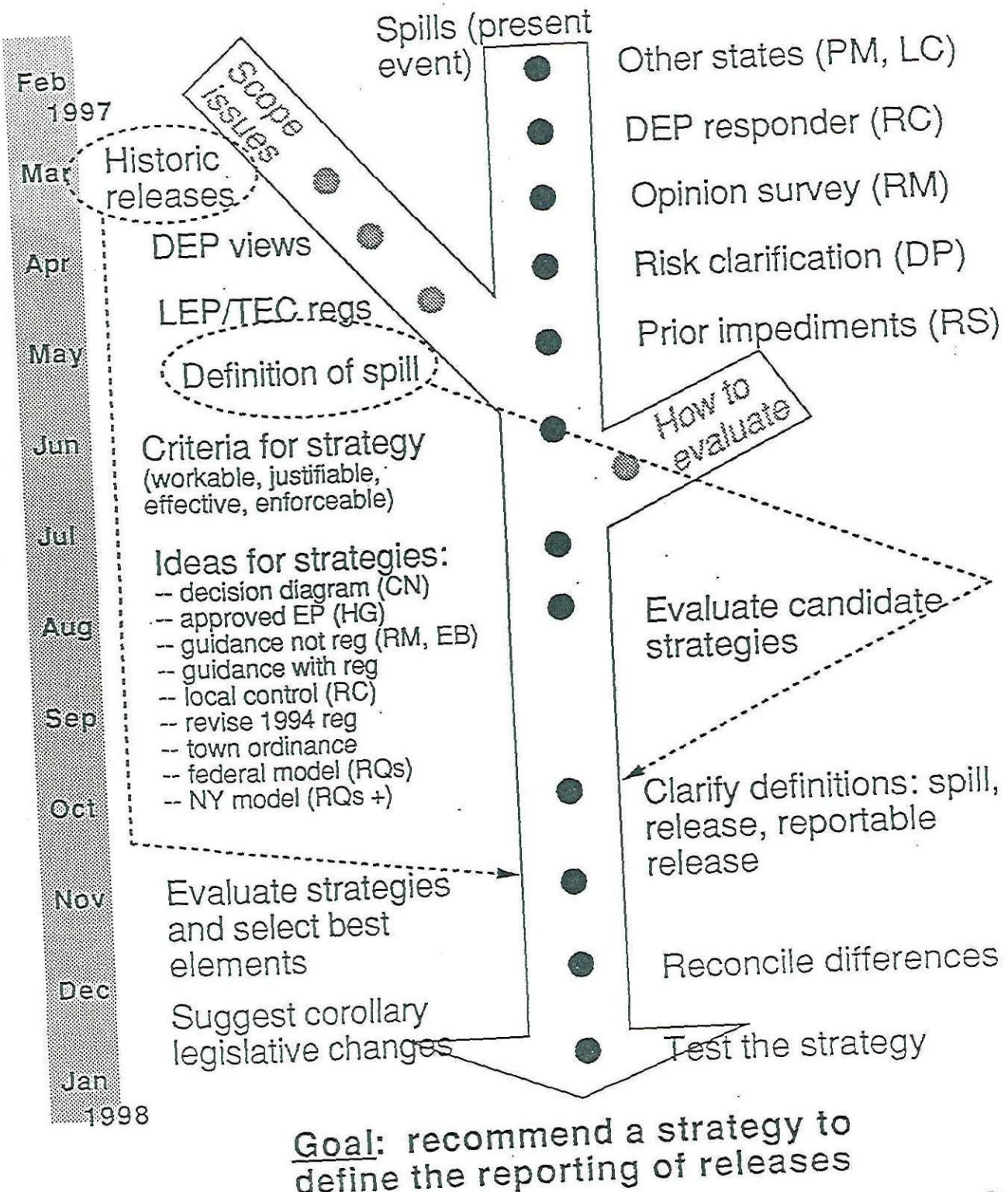

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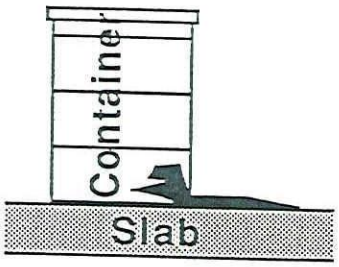
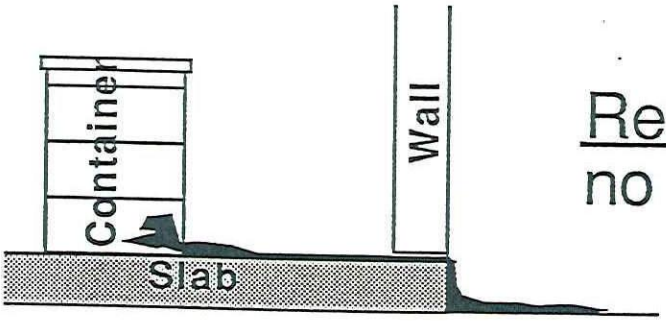
Figure 2

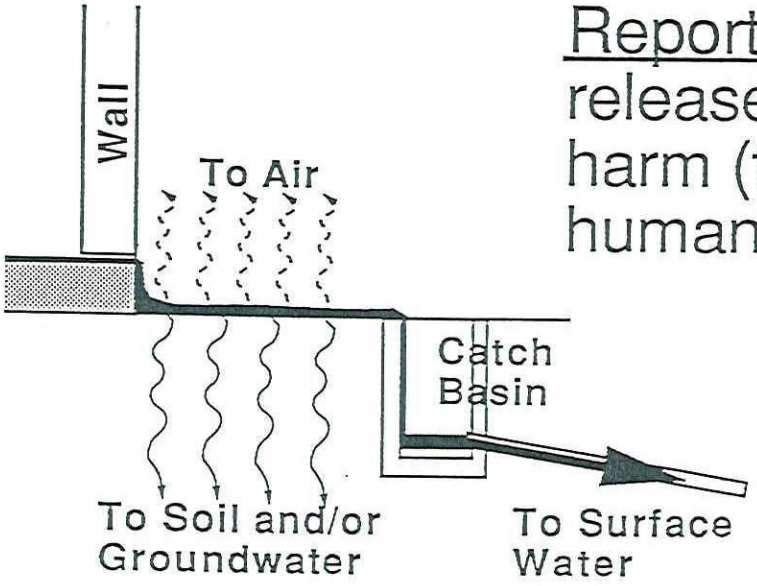
TERMINOLOGY CLARIFICATION



Spill: material leaves its container (or piping / transport system) in an unplanned, uncontrolled manner



Release: spilled material no longer confined



Reportable Release: release that could cause harm (to environment or human health)

Figure 3

EXAMPLE REPORTABILITY MODEL / QUESTIONNAIRE

All the following questions must be asked in order to determine if a reportable release has occurred.

1. Was release greater than the Federal RQ for that substance? If yes then report to state.
2. Was release greater than ___% of the Federal RQ for that substance? If yes then go to 2a. If no go to 3.

2a. Was spill contained in secondary containment? If no then report to state. If yes then go to 2b.

2b. Was spill cleaned up within ___ hours? If no then report to state. If yes then go to 3.

3. Was there a potential for a major fire/explosion? If yes then report to state.
4. Was any material released to surface waters? If yes then report to state.
5. Was more than ___ material released to the sanitary sewer? If yes then report to state and POTW.
6. Was material spilled onto an impervious surface? If yes then go to 6a. If no then go to 7.

6a. Was spill cleaned up within ___ hours? If no then report to state.

7. Was material spilled then released outside in quantity less than __? If yes then go to 7a. If no then go to 8.

7a. Was any release to soil cleaned up within ___ hours? If no then report to state.

8. Was material spilled onto a permeable surface? If yes then go to 8a. If no then go to 9.

8a. Was spill cleaned up within ___ hours? If no then report to state.

9. Could spill negatively impact non-employees (neighbors)? If yes then report to state.
10. Was spill an OSHA regulated carcinogen? If yes then report to state.
11. Could spill release volatile or toxic gases? If yes then report to state.

If you have answered all questions and have not answered a question that required you to report to the state then you have not had a reportable release. But, if time is running out or you aren't sure, report.

Note: this is an example of a method and a structure to effectively diagnose a need to report; it illustrates a concept, and is not intended to be complete or comprehensive.

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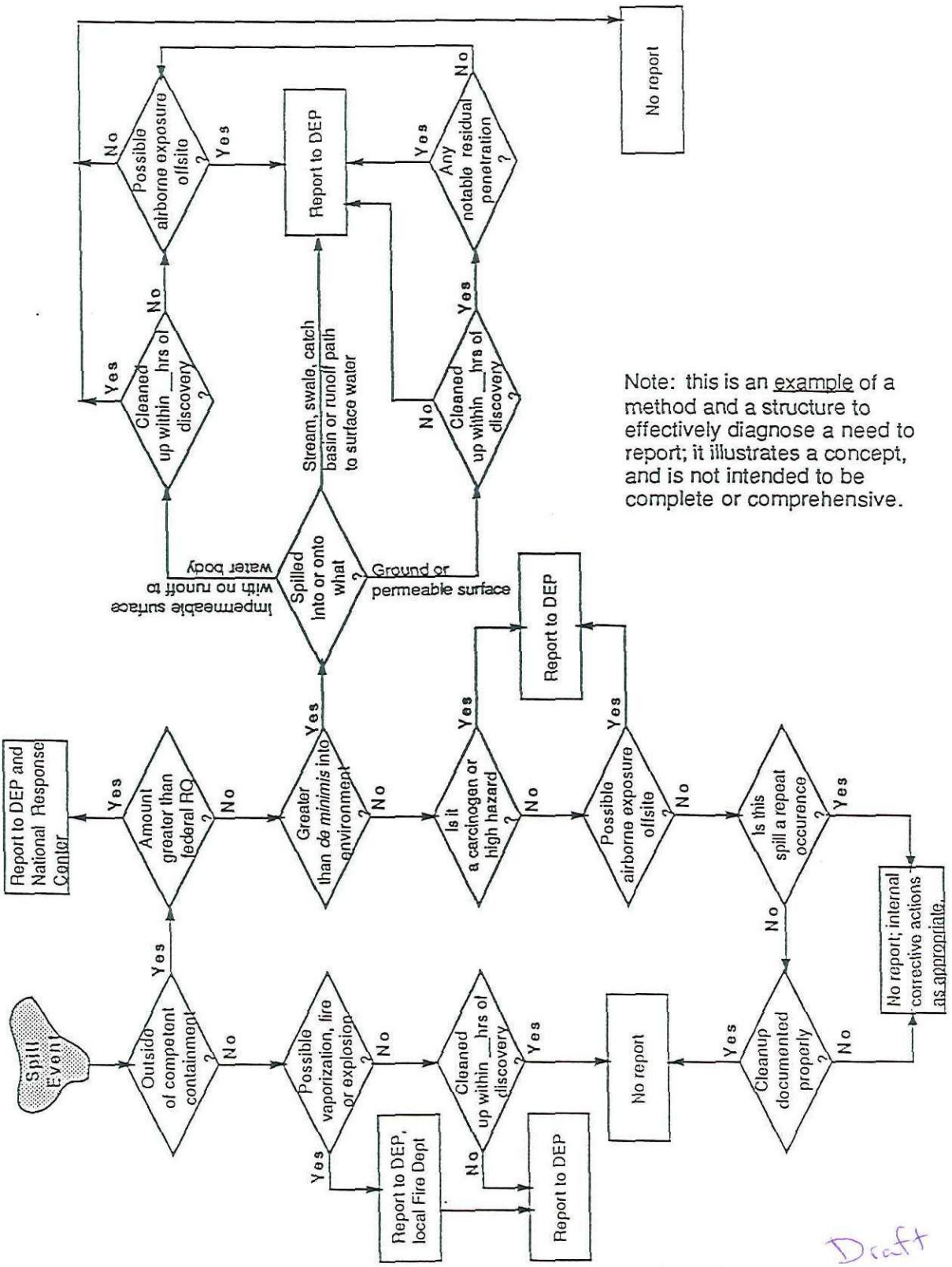
Figure 4

EXAMPLE REPORTABILITY MODEL / DIAGRAM



Note: this is an example of a method and a structure to effectively diagnose a need to report; it illustrates a concept, and is not intended to be complete or comprehensive.

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